

Maternal & Reproductive Health

MATERNAL HEALTH OVERVIEW

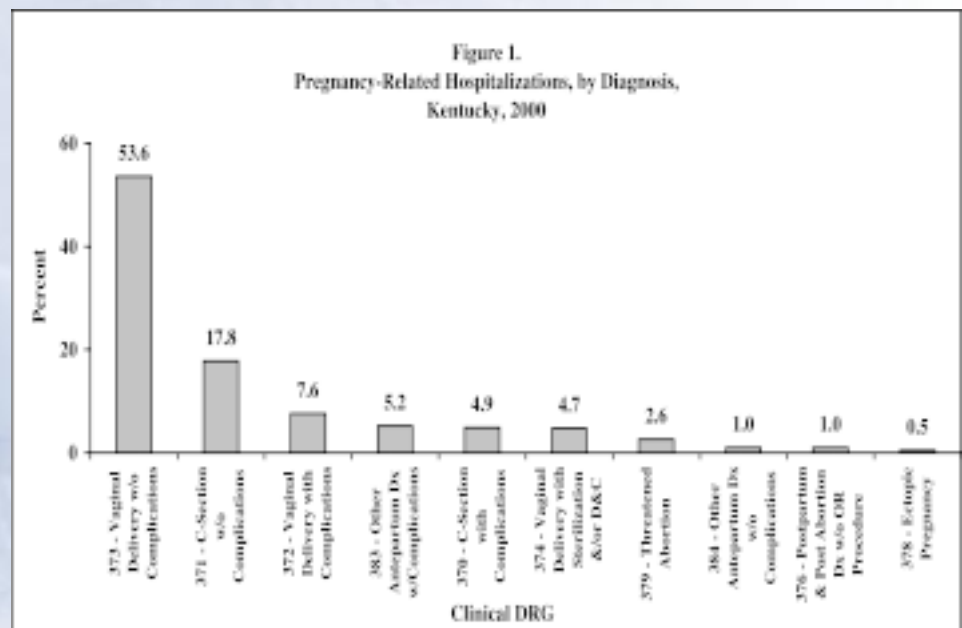
Maternal health has long been the hallmark of public health in this country and remains a vital indicator of women's health in the 21st century. Approximately 6 million American women become pregnant each year, and more than 10,000 give birth each day. Safe motherhood is a vital social and economic investment. It begins before conception with proper nutrition and a healthy lifestyle. It continues with appropriate prenatal care, the prevention of complications when possible, and the early and effective treatment of any complications that do occur. It ends with a labor at term without unnecessary interventions, the delivery of a healthy infant, and a healthy post-partum period in a

positive environment that supports the physical and emotional needs of the woman, infant, and family.¹

Pregnancy Related Complications

Among women who become pregnant in the United States each year, at least 30 percent have a pregnancy-related complication before, during, or after delivery. These complications can cause long-term health problems even when they do not result in death. Some of the most common complications of pregnancy are:

- Miscarriage
- Ectopic pregnancy
- Excessive vomiting
- Diabetes
- Hemorrhage
- Infection
- Pregnancy-induced



SOURCE: 2000 Kentucky Hospital Discharge File, Health Policy Development Branch

- hypertension
- Premature Labor
- Need for a cesarean delivery

In the United States, hospitalizations for pregnancy-related complications occurring before delivery account for more than 2 million hospital days of care each year.²

In Kentucky, childbirth and pregnancy related complications were the primary diagnosis for over 51,000 hospital discharges among females in 2000.³ Vaginal deliveries without complications represented 54% of all pregnancy-related hospitalizations. (Fig. 1)

Prenatal Care

Prenatal care is strongly linked to a healthy pregnancy and birth. In Kentucky in 1998, 85.5 percent of all live births occurred among mothers who received prenatal care in the first trimester of pregnancy.⁴ There is, however, a racial gap in the number of live births to women who received prenatal care in the first trimester. In 1998, 86.4 percent of live births to white women were to those who received prenatal care in the first trimester, compared to 77 percent of live births to black women receiving first trimester prenatal care.⁵

Providing appropriate prenatal care for pregnant women in Kentucky has long been a high public health

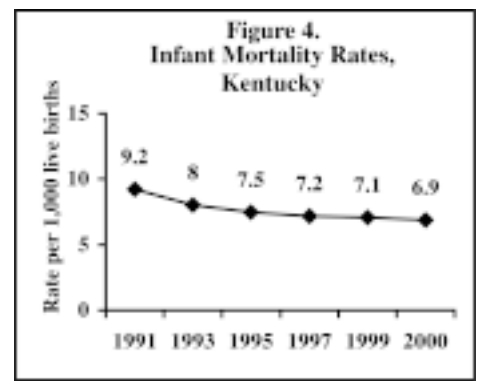
priority. To ensure access to important prenatal services, women in Kentucky who are pregnant may qualify for “presumptive eligibility” under Medicaid guidelines. These women receive 90 days of prenatal care while full eligibility for Medicaid services is being determined.

Maternal and Infant Mortality

At the beginning of the 20th century, for every 1,000 live births, six to nine women in the United States died of pregnancy-related complications, and approximately 100 infants died before age one year.⁶ Maternal mortality rates were highest in this country from 1900 – 1930. Poor obstetric care and delivery practices were mainly responsible for the high number of maternal deaths, most of which were preventable.⁷ Most births occurred at home with the assistance of midwives or general practitioners, with inappropriate and excessive surgical and obstetric interventions (e.g. induction of labor, use of forceps, episiotomy, and cesarean deliveries). These procedures were often performed without following principles of asepsis. As a result of these practices, 40 percent of maternal deaths were caused by sepsis or infections, with the remaining deaths primarily attributed to hemorrhage and toxemia.⁸

Environmental interventions, improvements in nutrition, advances in surveillance and monitoring of disease, increases in education levels, and improvements in standards of living contributed to the remarkable decline in maternal deaths since the turn of the 20th century.⁹ (Fig. 2)

Nationally, the decline in infant mortality is unparalleled



SOURCE: Kentucky Department for Public Health, Division of Adult and Child Health

by other mortality reductions this century. In 1900, in some areas of the U.S., up to 30 percent of infants died before reaching their first birthday.¹⁰ Nationally, from 1915 through 1997, infant mortality rates declined by over 90 percent to 7.2 per 1,000 live births.¹¹ (Fig. 3)

Infant mortality in Kentucky has decreased by 25 percent since 1991 and was the same rate as the nation (7.1/1,000 live births) for 1999. In 2000, Kentucky's infant mortality rate was the lowest since records have been kept at 6.9/1,000 live births.¹² (Fig. 4)

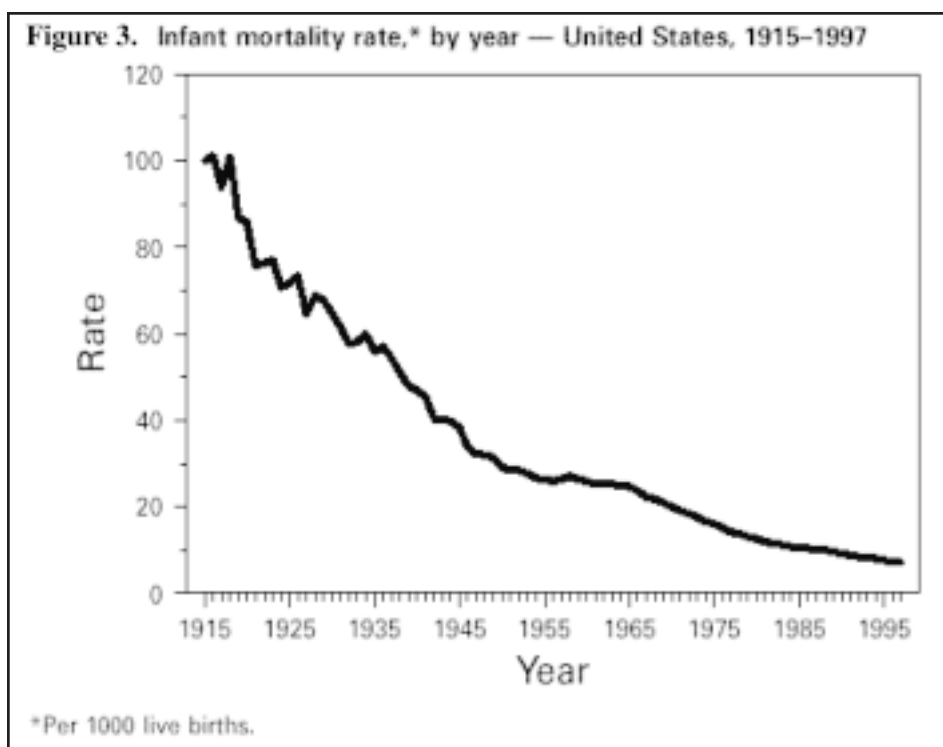
A racial disparity still exists among infant mortality rates in Kentucky. In 1998, there were 6.9 deaths per 1,000 live births for white women, versus 14.7 for black women. (Fig. 5) Likewise, national infant mortality rates among non-Hispanic black women are twice those of non-Hispanic white women.¹³

One in five infant deaths is due to birth defects, making them the leading cause of infant mortality. Birth defects rank second in leading causes of death among 1 to 4 year-olds and fourth among 5 to 14-year olds.¹⁴

Pre-term delivery is often another reason for infant



SOURCE: MMWR, *Achievements in Public Health, 1900 – 1999*. Vol. 48 No. 38., October 1, 1999



SOURCE: MMWR, *Achievements in Public Health, 1900 – 1999*. Vol. 48 No. 38., October 1, 1999

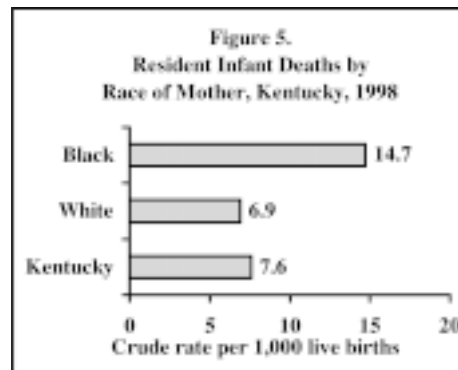
mortality. Nationally and in Kentucky, pre-term delivery rates are increasing among white females, from 75.4 per 1,000 live births in 1990 to 83.7 in 1997 nationally; and from 88.3 to 98 for Kentucky. Among black women, pre-term delivery rates are *decreasing*. National rates for black women dropped from 178.5 to 160.9 from 1990 to 1997. In Kentucky, these rates dropped from 186 to 170.5. Compared to neighboring states, Kentucky's rates for both black and white women in 1997 are slightly lower than Tennessee and West Virginia, but higher than Ohio. (Fig. 6)

Low Birth Weight

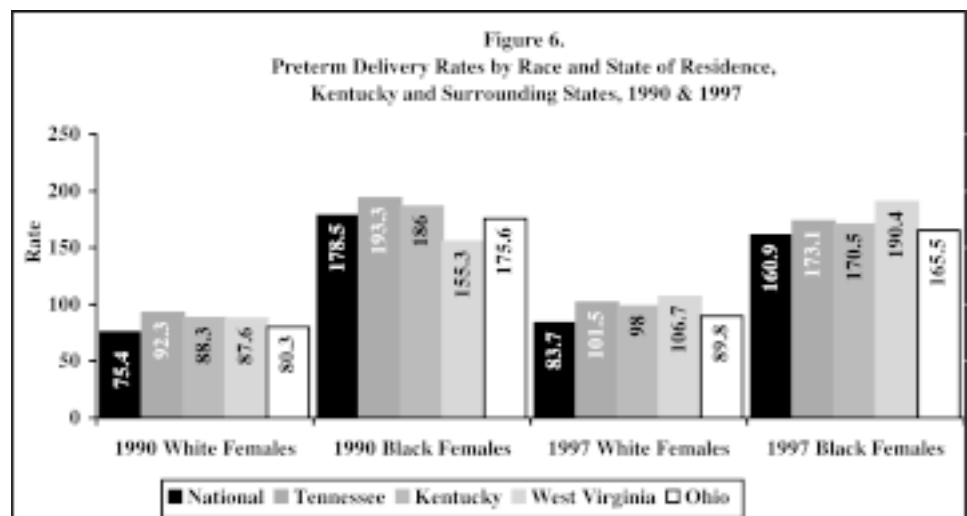
Despite the dramatic decline in infant and maternal mortality during the 20th century, challenges remain. Perhaps the greatest challenge is the persistent difference in maternal and infant health among various racial/ethnic groups, particularly between black and white women and infants. Although overall rates have plummeted, black infants are more than twice as likely to die as white infants; this ratio has increased in recent decades. A high risk associated with infant mortality is low birth weight (LBW 2500 grams or 5 lbs. 2oz.) Low birth weight incidence is nearly twice as high among black infants in Kentucky than white infants. (Fig. 7)

During the last few decades, the key reason for the decline in infant mortality has been the improved rates of survival among LBW babies, not the reduction in the incidence of LBW. The long-term effects of LBW include neurological disorders, learning disabilities, and delayed development.¹⁵

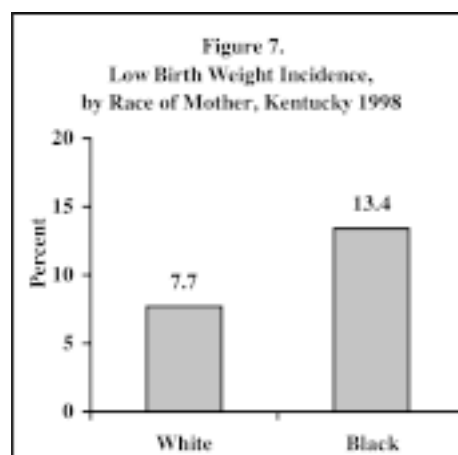
Cigarette smoking during pregnancy can result in LBW babies and has also been associated with infertility, miscarriages, tubal pregnancies, infant mortality and childhood morbidity. Additionally, cigarette smoking may cause long-term learning disabilities.¹⁶



SOURCE: Kentucky Department for Public Health, Surveillance and Health Data Branch, 1998 Vital Statistics Report



SOURCE: CDC/MMWR, "State-Specific Changes in Singleton re-term Births Among Black and White Women — United States, 1990 and 1997, September 22, 2000/49(37): 837-840



SOURCE: Kentucky Department for Public Health, Surveillance and Health Data Branch, 1998 Kentucky County Health Profile

The odds of a child developing asthma are twice as high among children whose mothers smoke at least 10 cigarettes a day. Sudden Infant Death Syndrome (SIDS) is also strongly linked to maternal smoking, according to the Campaign for Tobacco Free Kids.¹⁷

Fetal Alcohol Syndrome

Fetal Alcohol Syndrome (FAS) is a disorder characterized by growth retardation, facial abnormalities, and central nervous system (CNS) dysfunction, caused by a woman's use of alcohol during pregnancy.¹⁸ Not all women who drink heavily during pregnancy will have a child with FAS. Why some women are more susceptible than others is not entirely clear; however, by not drinking during pregnancy, women can ensure that their babies will not have FAS or any other alcohol-related outcomes.

The U.S. Public Health Service indicates that there is no safe level of alcohol use during pregnancy. If a woman drinks while pregnant, she puts her developing fetus at risk for a wide spectrum of adverse effects including spontaneous abortion; growth retardation; physical, mental, and behavioral abnormalities; facial abnormalities; and CNS impairment, such as developmental delay, speech or language delay, lower IQ, and decreased head circumference. In the worst cases, prenatal exposure to alcohol may result in fetal death.

The reported prevalence rates of FAS vary widely. In the general population, estimates vary from 0.7 cases per 1,000 to 1.0 cases per 1,000 live births

with higher rates (e.g., 3 per 1,000 live births) among American Indian and Alaska natives. Other neurodevelopmental effects of alcohol are believed to occur more frequently. In Kentucky, the number of FAS cases recorded by vital statistics on birth certificates is very low, with only eight cases statewide in 1997, and zero reported for 2000, however, this data is incomplete due to the difficulty in identifying FAS at birth. The Kentucky Birth Surveillance Registry program in the Kentucky Department for Public Health maintains a data registry of all children from birth to age five who are born with FAS and other birth defects.

Folic Acid

Folic acid, or folate, is a B-vitamin that can be found in some enriched foods and vitamin pills. If women have enough of it in their bodies before pregnancy, it can decrease the risk for neural tube defects, which are birth defects of the baby's brain (anencephaly) or spine (spina bifida).¹⁹

The U.S. Public Health Service recommends that all women who could possibly become pregnant get 400 micrograms (or 0.4 mg) of folic acid every day. This could prevent up to 70 percent of serious birth defects.²⁰ But to do this, women need folic acid before they get pregnant. Since one half of all pregnancies are unplanned, it is important to get enough folic acid every day, since by the time a woman realizes she's pregnant, the baby's brain and spine may already be formed.²¹

General public awareness of folic acid among women of childbearing age has increased from 52 percent in 1995 to 79 percent in 2001. However, only 32 percent of women were aware of the specific recommendations regarding folic acid intake and only 19 percent were aware that folic acid prevented birth defects. (Fig. 8)

To prevent the high rate of neural tube defects in Kentucky, which is 1 ½ times the national rate, the Governor's Early Childhood Initiative program launched a folic acid awareness campaign with funds from Phase I of the Tobacco Master Settlement Agreement. This program provides several services to Kentucky women including:

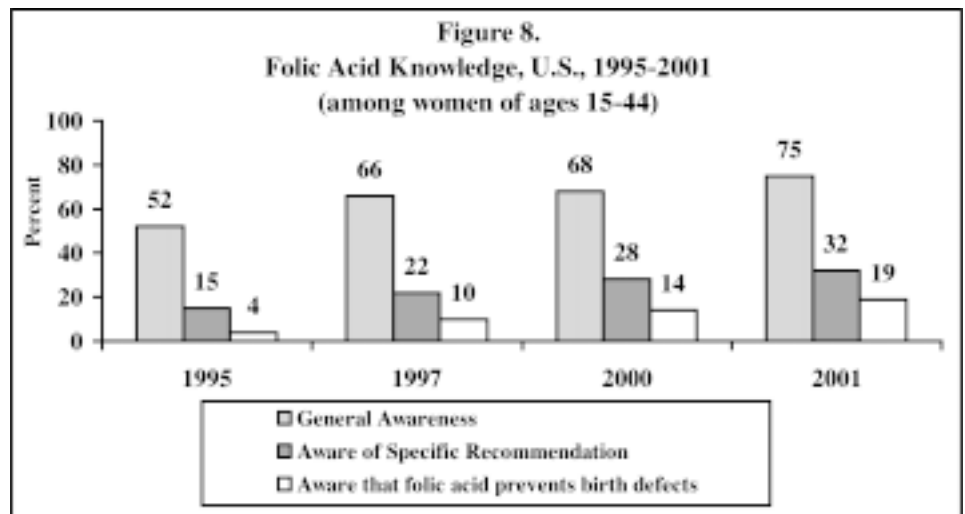
- Distribution of folic acid through all local health departments and the Commission for Children with Special Health Care Needs.
- Trained folic acid nurse coordinators in local health departments.
- Regional training programs and educational kits.

Nearly 75,000 women in Kentucky have received folic acid supplements and intensive counseling through this program.²²

For the combined years 1997 and 1999, 40 percent of African-American and white women ages 18-44 consumed vitamins containing 400 micrograms of folic acid daily. (Fig. 9)

Fertility

The fertility rate relates births to the population at risk of giving birth, (women aged 15 – 44). Recent data have



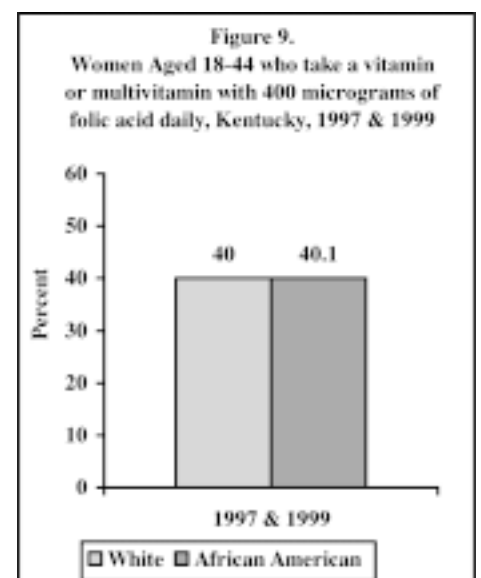
SOURCE: March of Dimes, *Folic Acid and the Prevention of Birth Defects, A national survey of pre-pregnancy awareness and behavior among women of childbearing age, 1995 – 2001*. August, 2001

reflected an increase in the fertility rate among women in the U.S., from 65.9 births per 1,000 women ages 15-44 in 1999 to 67.6 in 2000.²³ The fertility rate for Kentucky was 61.6 in 1999, the most recent year of available data.²⁴

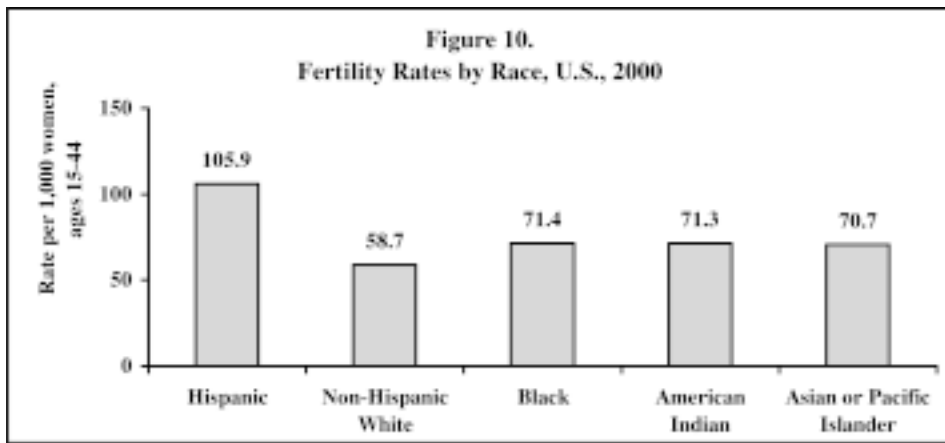
Nationally, the crude birth rate was 14.8 in 2000, representing an increase over the 1999 rate of 14.5. Kentucky's rate was slightly lower at 13.8 per 1,000 women in 1999 – unchanged from the 1998 rate.²⁵

For 2000, Hispanic women had the highest fertility rate nationally with 105.9 births per 1,000 women aged 15 – 44. This rate was 80 percent higher than for non-Hispanic white women who had a rate of 58.7, representing the lowest rate nationally. (Fig. 10) Births to Hispanic women comprised 20 percent of all births in the United States in 2000.²⁶

The rate of births to women in Kentucky has increased slightly over the past five years. In 1995, there were 52,054 resident live births representing a crude rate of 13.5 and in 1999 there were 54,492 resident births at a rate of 13.8 births per 1,000 total population.



SOURCE: Kentucky BRFSS, 1997 and 1999



SOURCE: *National Vital Statistics Reports*, Vol 49, No. 5. National Center for Health Statistics, CDC: July 24, 2001

Nationally, as a result of the continued decline in teenage birth rates and increases in the birth rate for most groups aged 20 years and over, the proportion of all births occurring to women under the age of 20 years declined from 12.3 births per 1,000 population to 11.8 between 1999 and 2000. The birth rate for women ages 30-34 years rose five percent from 1999 to 2000, (89.6 to 94.2 births per 1,000 female population) and was the highest in 30 years.²⁷

Kentucky birthrates are lower than birthrates nationally, yet are following the same trends. Births among teenagers

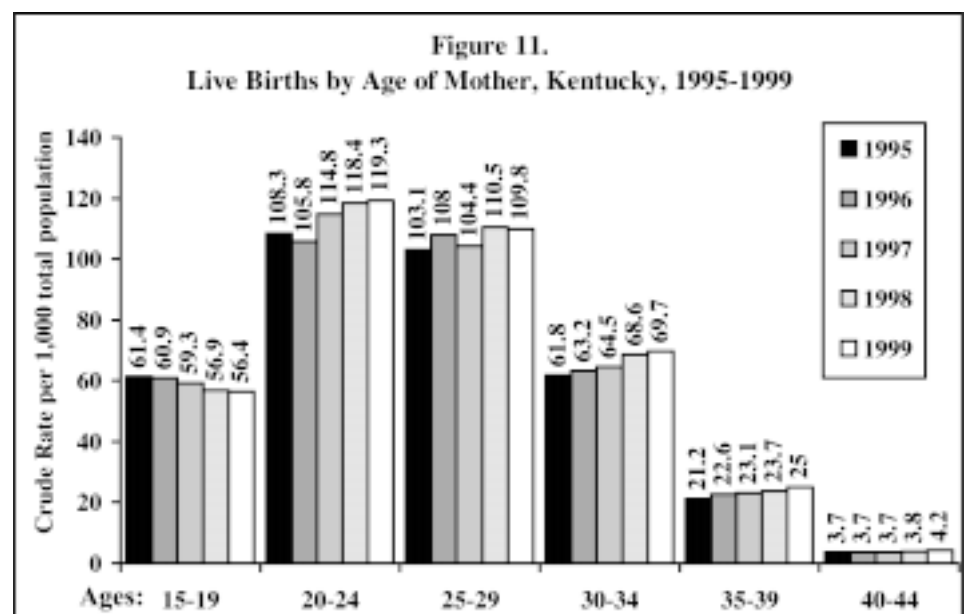
have dropped from a crude rate of 61.4 per 100,00 population in 1995 to 56.4 in 1999. Women aged 20 to 24 experienced the greatest increase in birth rates from 1995-99, growing from 108.3 to 119.3. (Fig. 11)

Breastfeeding

Breastfeeding is considered a special time for the whole family. It is the natural way to give a baby the best start in life.²⁸ (Fig. 12)

Exclusive breastfeeding is ideal nutrition and sufficient to support optimal growth and development for approximately the first six months after birth. The American Academy of Pediatrics recommends breastfeeding for the first 12 months of life, and thereafter for as long as mutually desired by baby and mother.²⁹

Despite the many benefits of breastfeeding, statistics reveal that 64 percent of American mothers' breastfeed in the early post-partum period, with only 29 percent still breastfeeding six months after birth. Racial and



SOURCE: Kentucky Department for Public Health, Surveillance and Health Data Branch, 1995 to 1999 Kentucky Annual Vital Statistics Reports

ethnic disparities in breastfeeding are wide, revealing extremely low rates among African-American women. Healthy People 2010, the national's health agenda for the next decade, has set an objective to increase the proportion of all mothers who breastfeed in the early post-partum period to 75 percent.³⁰

Family Planning

During the 20th Century, the hallmark of family planning in the United States has been the ability to achieve desired birth spacing and family size. Fertility decreased as couples chose to have fewer children; concurrently, child mortality declined and the average age at marriage increased.³¹

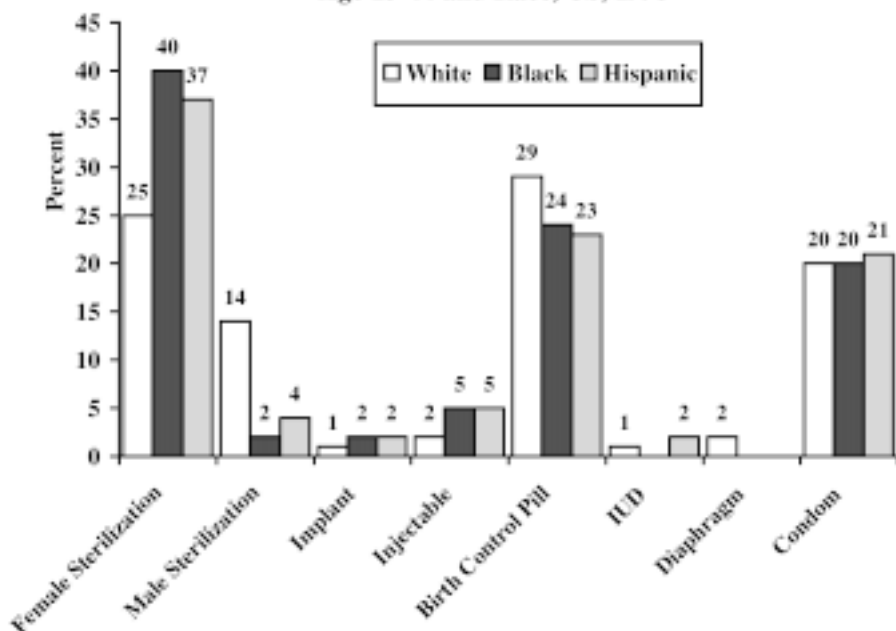
Family size increased from 1940 until 1957, when the average number of children per family peaked at 3.7. In 1960, the era of modern contraception began when both the birth control pill and intrauterine device (IUD) became available to women. These effective and convenient methods resulted in widespread changes in birth control. By 1965, the pill had become the most popular birth control method, followed by the condom and contraceptive sterilization. During the 1970s and 1980s, contraceptive sterilization became more common and is now the most widely used method in the United States. Since 1972, the average family size has leveled off at approximately 2 children, and the safety, efficacy, diversity, accessibility, and use of contraceptive methods has increased.³²

Figure 12.
Advantages of Breastfeeding

For the Baby	For the Mother
<ul style="list-style-type: none"> Breastmilk is the best food for the baby. It has everything a baby needs to grow and develop. It is easy to digest. Breastmilk changes to meet the needs of the baby and is perfect for health, premature or sick newborns. Breastfeeding helps protect the baby from getting sick. Breastfed babies have fewer ear infections and stomach problems like diarrhea or vomiting. Breastfeeding may help decrease or delay allergies. Breastfeeding helps in the correct growth of the baby's face, mouth and teeth. Breastfeeding provides better brain development. Breastfeeding gives skin-to-skin contact and is comforting to the baby. 	<ul style="list-style-type: none"> Breastfeeding helps the mother feel close and bonded with her baby. By spending time together, the mother learns about her baby's likes and dislikes and gains confidence in meeting her baby's needs. Breastfeeding helps the mother feel more relaxed and peaceful. Breastfeeding burns calories. Weight loss after pregnancy may be easier for the mother. Breastfeeding saves time, since there are no bottles to clean, prepare, warm or sterilize. Breastmilk is always ready and the correct temperature. Breastfeeding may reduce the risk of breast and uterine cancer.

SOURCE: Kentucky Department for Public Health, Division of Adult and Child Health, WIC Program

Figure 13.
Female Methods of Contraception by Age 15-44 and Race, US, 1995



NOTE: Method of contraception used in the month of interview. If multiple methods were reported, only the most effective method is shown.

SOURCE: Centers for Disease Control and Prevention (CDC), National Center for Health Statistics, *National Survey of Family Growth*

Figure 14.
Title X Family Planning Services
in Local Health Departments,
Kentucky, 2000

METHOD OF CONTRACEPTION	Female Users
Sterilization (user or partner)	470
Oral Contraceptives	56,656
IUD	120
Hormone Implant	136
Injection	20,718
Cervical Cap	0
Diaphragm (with or without jelly or cream)	128
Condom (with or without spermicide)	5,803
Spermicidal foam, jelly, or cream; or contraceptive film (used without another method of contraception)	172
Natural Methods	52
Method Unknown*	22,268
NO METHOD	
Pregnant	1,216
No method used for other reasons	11,132
TOTAL USERS	118,871

*Method unknown includes clients receiving pregnancy tests whose methods are either unknown or randomly used.

SOURCE: Kentucky Department of Public Health, Title X Family Planning Annual Report, 2000

In 1970, federal funding for family planning services was established under the Family Planning Services and Population Research Act, which created Title X of the U. S. Public Health Service Act.

The most commonly used contraceptives are female sterilization, male sterilization, implant, injectable, birth control pills, intrauterine device (IUD), diaphragm and condom. Female sterilization and birth control pills are the most often used contraceptives.³³ (Fig. 13)

In Kentucky, local health departments' family planning clinics served nearly 119,000 clients, primarily female, in 2000. Of these, the majority used oral contraceptives as their preferred method of birth control (56,656).³⁴ (Fig. 14)

Contraception coverage by private insurance is another issue affecting women's access

to healthcare. Most reversible birth control methods available to women require a visit to the doctor or a prescription. Many private insurance plans do not cover the full range of contraceptive options, thus forcing many women to forego birth control altogether. In 1995, nearly two-thirds (64 percent) of women ages 15-44 were using some form of contraception.³⁵ During women's childbearing years, out-of-pocket health expenditures for women are 68 percent more than their male counterparts.³⁶ A primary reason for this increased expense is reproductive health services, mostly pregnancy-related care, and to a lesser extent, contraception.³⁷ (Fig. 15)

Emergency Contraception

Emergency contraceptives are methods of *preventing* pregnancy *after* unprotected sexual intercourse. They *do not* protect against sexually transmitted infections. Emergency contraception can be used when a condom breaks, after a sexual assault, or any time unprotected sexual intercourse occurs.³⁸ Emergency contraception *is not* an abortifacient.

Emergency contraception, if taken within 72 hours of unprotected sexual intercourse, can prevent a pregnancy from developing. It has become popularly known as the "morning after pill". Emergency contraception pills can be taken right away or up to three days after having had unprotected sex - that is, sex during which no birth control was used or where birth control may have failed. Therapy is more effective the earlier it is initiated within the 72-hour window.³⁹

Figure 15.
Costs of Commonly Used
Contraceptives

Oral Contraceptives	\$250/year + \$40 office visit
Injectables	\$120/year + \$40 office visit
Diaphragm	\$35 + \$40 office visit
Implants	\$365 + \$330 insertion/\$100 removal
Copper-T IUD	\$184 + \$200 insertion/\$70 removal

Note: Based on costs in managed care settings.

SOURCE: Hatcher, RA et al. *Contraceptive Technology, Seventeenth Edition*. Ardent Media, Inc., New York: 1998. As printed in Women's Issue Brief, "State Policies on Access to Gynecological Care and Contraception", Update: December 2000, The Henry J. Kaiser Foundation.

REPRODUCTIVE HEALTH

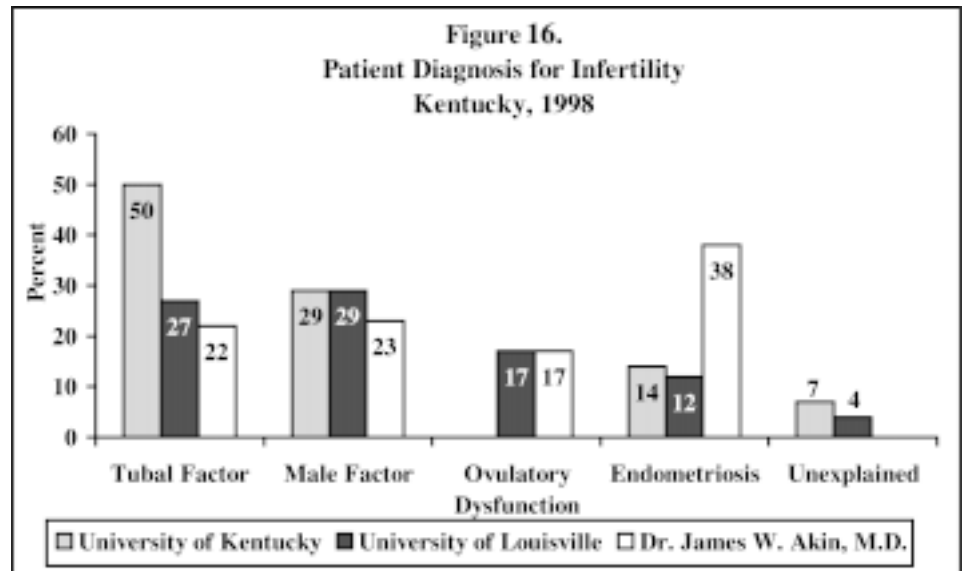
Infertility

Infertility is a disease of the reproductive system that impairs the body's ability to perform the basic function of reproduction. It is defined as the inability to conceive a child despite trying for one year.⁴⁰ Infertility affects about 6.1 million people in the U.S. — about ten percent of the reproductive age population.⁴¹

There have been major advances in reproductive medicine in the last several decades. In the 1960s, the sequence of physiologic events in the normal menstrual cycle and during pregnancy was characterized. This knowledge led to the successful use of various hormones or their analogues for ovulation induction. The combination of ovulation induction and in vitro fertilization (IVF) of the harvested ova resulted in the first “test tube” baby in 1978. During the last 20 years, refinements in ova harvesting and embryo culture techniques have led to a steady increase in pregnancy rates.⁴²

About one in four attempts at in vitro fertilization results in a successful birth.⁴³ For women using their own eggs, age plays a pivotal role in success: those under 35 years fare best, with a 32 percent success rate, while women aged 40 and older successfully carried a fertilization attempt to term just 8 percent of the time. For women who opt for a donor egg – a much smaller group – the success rate is about 40 percent, regardless of age.⁴⁴

The three fertility clinics in Kentucky are the University OB/GYN Associates Fertility



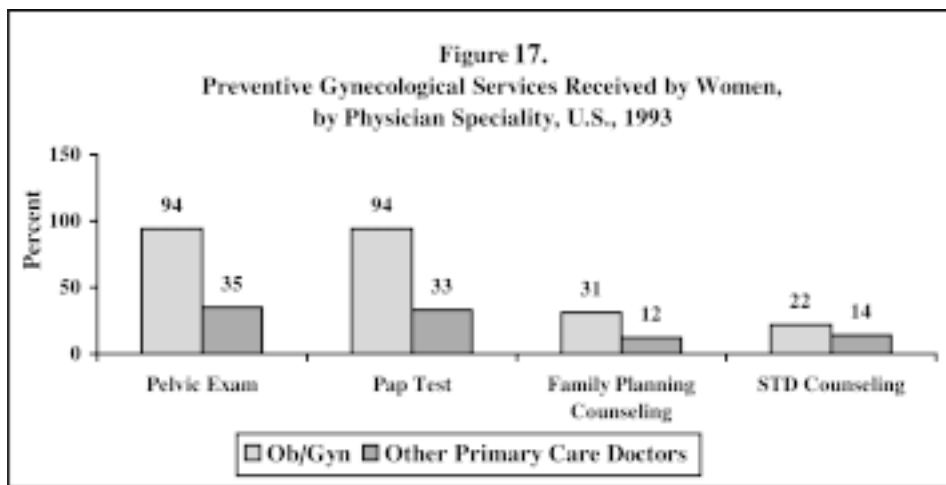
SOURCE: CDC, 1998 Assisted Reproductive Technology Success Rates, National Summary and Fertility Clinic Reports

Center in Louisville, Kentucky; University of Kentucky in Lexington, Kentucky; and Dr. James W. Akin, M.D. in Lexington, Kentucky. There are several diagnoses for infertility – tubal factor, male factor, ovulatory dysfunction, endometriosis, uterine factor, other factors and unexplained.⁴⁵ (Fig. 16)

Access to Gynecological Care

Women visit the doctor more often than men, particularly during their reproductive years. Women often rely on their primary care provider and/or their obstetrician/gynecologist (ob/gyn) for care related to reproductive and sexual health as well as general screening and counseling services.⁴⁶

Women who visit an ob/gyn are more likely to receive recommended preventive gynecological services, such as a pelvic exam and a Pap test, than those seeing other types of primary care providers. Ob/gyns also provide more extensive counseling about family planning and STDs,



SOURCE: *Women's Issue Brief*, "State Policies on Access to Gynecological Care and Contraception", Update: December 2000, The Henry J. Kaiser Foundation

including HIV/AIDS.⁴⁷ (Fig. 17)

With 75 percent of women in the U.S. enrolled in managed care organizations, direct access to ob/gyns as primary care providers is increasing in many managed-care organizations. Currently, 38 states have adopted policies to regulate access to ob/gyns.⁴⁸ Of these states, 25, including Kentucky, provide direct access (no referral necessary) to ob/gyns. Sixteen other states have adopted laws requiring managed care plans to enable women to choose an ob/gyn as their primary care provider.⁴⁹

NOTES

¹ CDC, Safe Motherhood: Preventing Pregnancy-Related Illness and Death 2001.

² CDC, Safe Motherhood: Preventing Pregnancy-Related Illness and Death 2001.

³ Kentucky Department for Public Health, Health Policy Development Branch, 2000 Hospital Discharge File.

⁴ 1998 *Annual Vital Statistics Report*, Kentucky Department for Public Health, Health Data and Surveillance Branch.

⁵ 1998 *Annual Vital Statistics Report*, Kentucky Department for Public Health, Health Data and Surveillance Branch.

⁶ MMWR, *Achievements in Public Health, 1900 – 1999*. Vol. 48/No. 38 p. 849.

⁷ MMWR, *Achievements in Public Health, 1900 – 1999*. Vol. 48/No. 38 p. 853.

⁸ MMWR, *Ibid*.

⁹ MMWR, p. 850.

¹⁰ MMWR p. 850.

¹¹ 1998 *Annual Vital Statistics Report*, Kentucky Department for Public Health, Health Data and Surveillance Branch.

¹² Kentucky Department for Public Health, Division of Adult and Child Health, *Key Points on Infant Mortality*, 2000.

¹³ MacDorman MF, Atkinson JO. Infant mortality statistics from the period 1997 linked birth/infant death data set. Hyattsville, Maryland: US Department of Health and Human Services, CDC, National Center for Health Statistics, 1999 (National Vital Statistics Reports, vol 47, no. 23).

¹⁴ March of Dimes Perinatal Data Center, 2000.

¹⁵ JAMA, November 17, 1999 "Healthier Mothers and Babies – 1900 – 1999" – Vol 282, No. 19 (copyrighted 1999 American Medical Association).

¹⁶ CDC, <http://www.cdc.gov/ncbddd/bd/abc.htm>.

¹⁷ Center on Addiction and Substance Abuse at Columbia University, *Pregnancy and Substance Abuse*, Internet address http://www.casacolumbia.org/info-url1940/info-url_show.htm?doc_id=20811.

¹⁸ National Center on Birth Defects and Developmental Disabilities, *Frequently Asked Questions*, CDC web site, <http://www.cdc.gov/ncbddd/fas/default.htm>.

¹⁹ CDC, National Center on Birth Defects and Developmental Disabilities – Folic Acid. <http://cdc.gov/ncbddd/folicacid/default.htm>.

²⁰ CDC, National Center on Birth Defects and Developmental Disabilities – Folic Acid. <http://cdc.gov/ncbddd/folicacid/default.htm>.

²¹ *Ibid*.

²² KIDS NOW, Governor's Early Childhood Initiative Summary: August 28, 2001.

²³ *National Vital Statistics Reports*, Vol 49. No. 5. National Center for Health Statistics, CDC: July 24, 2001.

²⁴ Kentucky Department for Public Health, Health Data and Surveillance Branch, *Vital Statistics Report*, <http://publichealth.state.ky.us/data-warehouse.htm#VitalStatistics>.

²⁵ Kentucky Department for Public Health, Health Data and Surveillance Branch, *Vital Statistics Report*, <http://publichealth.state.ky.us/data-warehouse.htm#VitalStatistics>.

²⁶ *National Vital Statistics Reports*, Vol 49. No. 5. National Center for Health Statistics, CDC: July 24, 2001.

²⁷ *National Vital Statistics Reports*, Vol 49. No. 5. National Center for Health Statistics, CDC: July 24, 2001.

²⁸ Cabinet for Health Services, Kentucky Department for Public Health, Division of Adult and Child Health – WIC Program "Advantages of Breastfeeding".

²⁹ American Academy of Pediatrics, policy statement, <http://www.aap.org/policy/re9729.html>.

³⁰ OBGYN.net – (<http://www.obgyn.net/>) "Monograph Recognizes Health-Care Plans for Promoting Breastfeeding", September 3, 2001.

³¹ Bongaarts, JA framework for analyzing the proximate determinants of fertility. *Population and Development Review* 1978;4:105-32.

³² CDC/MMWR – *Achievements in Public Health, 1900-1999: Family Planning*.

³³ Centers for Disease Control and Prevention (CDC), National Center for Health Statistics. *National Survey of Family Growth*.

³⁴ Kentucky Department for Public Health, Division of Adult and Child Health.

³⁵ Piccinio, LJ, Mosher, WD. "Trends in Contraceptive Use in the US: 1982-1995," *Family Planning Perspectives*, (30)1:1998.

³⁶ Women's Research and Education Institute (WREI). *Women's Health Insurance Costs and Experiences*, 1994.

³⁷ WREI, 1998.

³⁸ Not-2-late.com, "The Emergency Contraception Web site at <http://ec.princeton.edu/>.

³⁹ Not-2-late.com, "The Emergency Contraception Web site at <http://ec.princeton.edu/>.

⁴⁰ Nordenberg, Tamar, *Overcoming Infertility*. Feb 1997. US Food and Drug Administration. http://www.fda.gov/fdac/features/1997/197_fert.html.

⁴¹ American Society of Reproductive Medicine, *Frequently Asked Questions about Infertility*, <http://www.asrm.org/Patients/faqs.html#Q1>.

⁴² JAMA, February 7, 2001 – Vol 285, No. 5 (copyrighted 2001 American Medical Association).

⁴³ Fourth Annual Assisted Reproductive Technology (ART) Report, published by the Centers for Disease Control and Prevention.

⁴⁴ JAMA, February 21, 2001 – Vol 285, No. 7 (copyrighted 2001 American Medical Association).

⁴⁵ 1998 Assisted Reproductive Technology Success Rates, National Summary and Fertility Clinic Reports, CDC.

⁴⁶ *Women's Issue Brief*, "State Policies on Access to Gynecological Care and Contraception", Update: December 2000, The Henry J. Kaiser Foundation.

⁴⁷ The Gallop Organization for ACOG, 1993, taken from: *Women's Issue Brief*, "State Policies on Access to Gynecological Care and Contraception", Update: December 2000, The Henry J. Kaiser Foundation.

⁴⁸ ACOG Department of State Legislative & Regulatory Activities, taken from: *Women's Issue Brief*, "State Policies on Access to Gynecological Care and Contraception", Update: December 2000, The Henry J. Kaiser Foundation.

⁴⁹ *Women's Issue Brief*, "State Policies on Access to Gynecological Care and Contraception", Update: December 2000, The Henry J. Kaiser Foundation.